

Lydia González  
CDTI

# RESEARCH AND INNOVATION INSTRUMENT AND OPPORTUNITY



# Index

- Context
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- Conclusion



## Some ideas/data

- In 2050, we'll be 9,000 million of people in the planet.
- In 2050, 80% of the population will live in cities, 50% of these cities still to be built.
- Waste generation is going to increase 70% from now to 2025.
- Air pollution in EU is responsible of 400,000 deaths/year; and cities produce more than 70% of GHGs.
- To go to the centre of the city by car is not a human right but to breath clean air is.



# Index

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Integration

Health & Wellbeing

Mobility & Transport

Jobs

Logistics

Waste

Education

Water

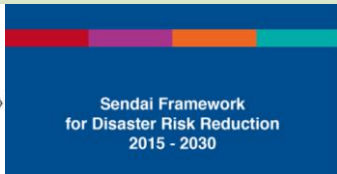
Pollution

...and some others

Population

Energy





...and others



## EU priority themes for Cities

- Air quality in cities
- Circular economy in cities
- Climate adaptation in cities
- Culture in cities
- Digital transition in cities
- Energy transition in cities
- Housing in cities
- Innovative and responsible public procurement in cities
- Inclusion of migrants and refugees in cities
- Jobs and skills in the local economy
- Sustainable use of land and nature-based solutions in cities
- Urban mobility
- Urban poverty

# 17 Sustainable Development Goals (SDGs)



SUSTAINABLE DEVELOPMENT  
KNOWLEDGE PLATFORM

<https://sustainabledevelopment.un.org/?menu=1300>

HOME

SDGS

TOPICS

HIGH-LEVEL POLITICAL FORUM

PROCESSES & UN SYSTEM

STAKEHOLDER ENGAGEMENT

PARTNERSHIPS

RESOURCES

ABOUT

## Sustainable Development Goals



TRANSFORMING OUR  
WORLD:  
THE 2030 AGENDA FOR  
SUSTAINABLE  
DEVELOPMENT

1 NO  
POVERTY



2 ZERO  
HUNGER



3 GOOD HEALTH  
AND WELL-BEING



4 QUALITY  
EDUCATION



5 GENDER  
EQUALITY



6 CLEAN WATER  
AND SANITATION



7 AFFORDABLE AND  
CLEAN ENERGY



8 DECENT WORK AND  
ECONOMIC GROWTH



9 INDUSTRY, INNOVATION  
AND INFRASTRUCTURE



10 REDUCED  
INEQUALITIES



12 RESPONSIBLE  
CONSUMPTION  
AND PRODUCTION



13 CLIMATE  
ACTION



14 LIFE  
BELOW WATER



15 LIFE  
ON LAND

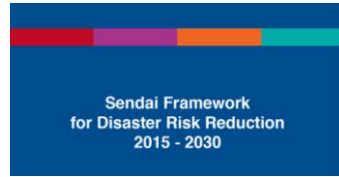


16 PEACE AND  
JUSTICE  
STRONG  
INSTITUTIONS



11 SUSTAINABLE CITIES  
AND COMMUNITIES





**SUSTAINABLE DEVELOPMENT GOALS**



**Research and Innovation**



**...and others**





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  - Instruments and programmes

  - Horizon 2020

  - And after 2020????

- Conclusion

## ES National Innovation Agency

- ✓ Created in 1977 (more than 40 years with R+D+I)
- ✓ Public Entity (Ministry of Science, Innovation and Universities)
- ✓ Focal point for the promotion of technological innovation
- ✓ Business innovation financing agency

**Foster Spanish entities' competitiveness and internationalization through innovation**

# CDTI, some results

In this 40 years...

\_ Supporting more than **12.400 companies**

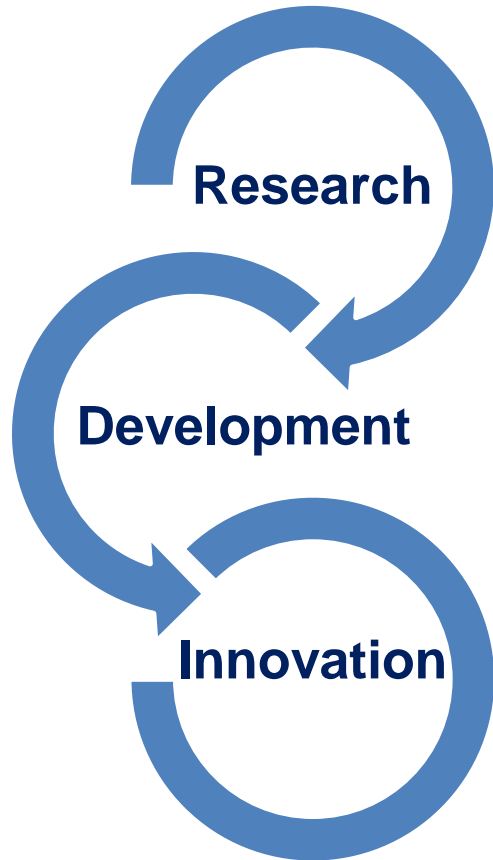
\_ **€23.500 million** for innovative companies and research entities:

\* **€14.700 million** direct funding

\* **€8.800 million** “return” from

International Programmes





# CDTI

- \_ **Orientation & Service**  
**(Expert technical advice)**
- \_ **R&D&I funding (companies)**
- \_ **R&D&I internationalization**  
**(all type of entities)**

# CDTI: Orientation & Services\*

## R&D&I funding, CDTI

Dept. Health, Bioeconomy, Climate and Natural Resources ([dptosbcnrn@cdti.es](mailto:dptosbcnrn@cdti.es) )

Dept. Energy, Transport, Manufacturing and Digital Society ([dptoetfsd@cdti.es](mailto:dptoetfsd@cdti.es))

## Horizon 2020

- [National Contact Points](#)
- ES delegates at H2020 Programme Committees

SC5, Environment & Raw Materials

SC3, Energy

SC4, Transport

ICT

....

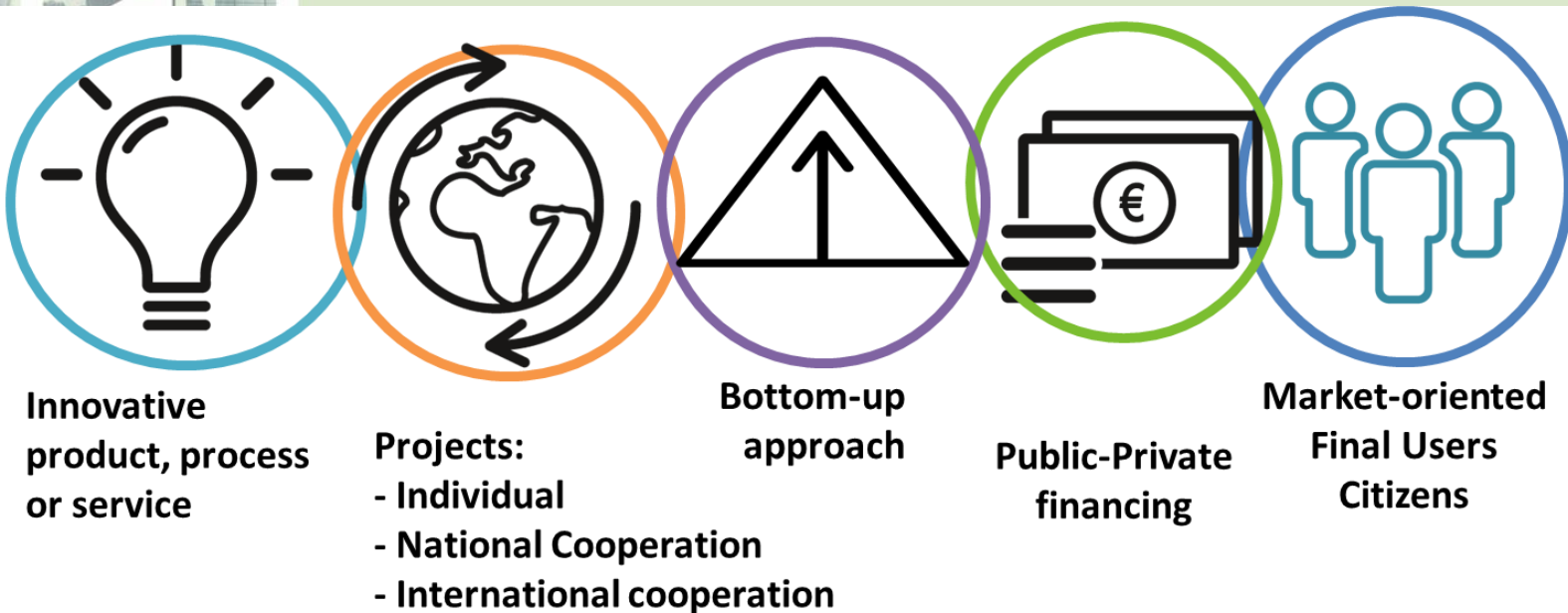
**CDTI in  
the world**





# CDTI: R&D&I funding

## From Idea to Market



## Project Applicants

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**Start-up**

**Micro SME**

**SME**

**Large enterprise**

# CDTI: R&D&I funding

## Funding R&D

- NEOTEC
- IDIs-R&D projects
- CIEN Programme  
(national cooperation)
- International  
Technological  
Cooperation Projects

## Funding Innovation

- LIC

**Information.-** <http://www.cdti.es/index.asp?MP=100&MS=802&MN=1>

# CDTI projects: some examples

## WATER ANAEROBIC TREATMENTS (TRATAMIENTOS ANAEROBIOS DE AGUAS)

General objective: to study the anaerobic processes for the treatment of waste-water to substitute the aerobic processes currently used.



The idea is to:

- Optimize energy consumption in water treatment
- Minimize sludge production
- Focus on urban waste-water and waste-water from agro-food industries

**Beneficiary.-** DAM with U. Valladolid

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# CDTI projects: some examples

**Smart-RSU** is a platform that provides predictive information about how full a specific container will be in the near future, within a scope of 7 days, based on historical waste collection data and contextual additional information.



SmartRSU

The challenge of the Project is to reduce the cost of the infrastructure to be deployed, since only a small amount of bins are equipped with sensors as a means of reference data.

These predictions along with applicable regulation are then used to determine which containers need to be emptied or can safely wait to the next day. The system also defines the optimal routes for the collecting trucks to empty all the selected bins, reducing fuel consumption, working hours and pollution.

**Beneficiaries.-** Soltel IT solutions SLU and AZVI, with the collaboration of U. Sevilla

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# CDTI: internationalization

## INTERNATIONAL TECHNOLOGICAL COOPERATION PROGRAMMES

### Management of Programmes :

- Multilateral (Eureka /Iberoeka)
- Bilateral
- Unilateral
- ERANET /ERANET COFUND
- PRIMA

&

Funding ES companies participating in these programmes



+

ES Delegates H2020 Programme  
Committes

ES National Contact Points (NCPs)



# CDTI: internationalization

## International Technological Cooperation Programmes: Eureka, Iberoeka, Bilateral y Unilateral



**Inovative**  
product, process or  
service with a  
civilian purpose



Participants from  
at least **2**  
**countries** from  
**EUREKA**  
**IBEROEKA**  
**BILATERLA**  
**UNILATERAL**



No thematic  
restrictions but  
projects need to  
reflect **market**  
**demand**



National  
evaluation  
procedures &  
funding

### Funding

- **Soft Loan: ( 33 % up NRT)\***
- **Grant (Innoglobal: 50% up)**

\*non-reimbursable tranche (NRT),

**Simple & Flexible. Open call**  
**Requires coordination in the countries involved**

# CDTI: internationalization



<http://ec.europa.eu/programmes/horizon2020/en>



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# CDTI: internationalization

**Budget**  
€75,028 million

**Focus on**  
**Societal Challenges**

**Defined topics**  
**(“top-down”)\***

**Different**  
**Instruments (RIAs,**  
**IAs, CSAs, PCPs...)**

**Funding for all type of**  
**entities (RTOs, Univ.,**  
**Companies, Admin....)**

**HORIZON 2020**

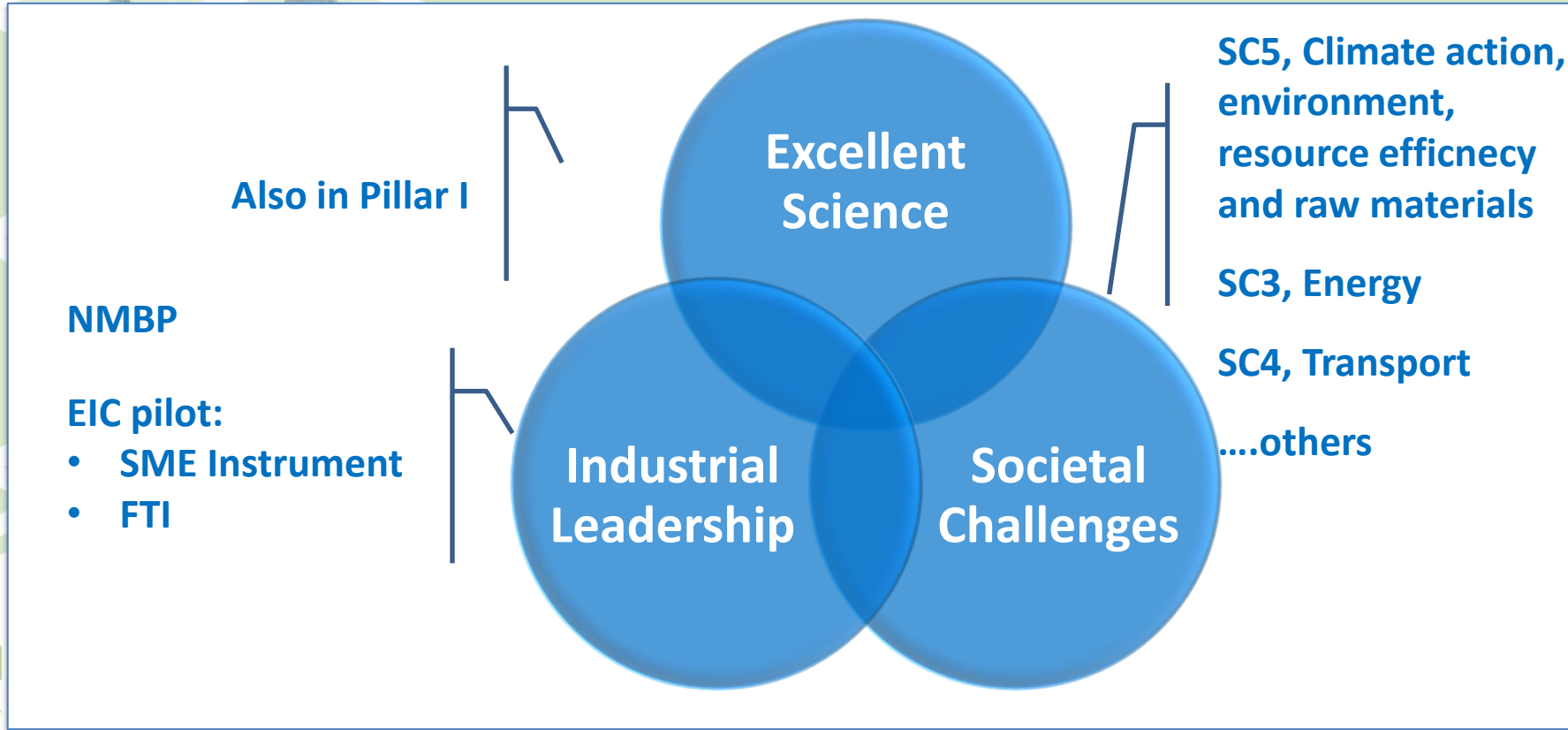
**EU Research and Innovation**  
**Framework Programme (2014-2020)**

**Europe 2020**

**International**  
**Cooperation**

**Collaborative**  
**Projects\***

# Cities in H2020



Total H2020 EC Contribution to Urban R&I projects 2014-July 2017: € 1.7 Billion

# Cities in H2020

## Some topics in 2014-2019 WPs.-

- **WASTE-3-2014:** Recycling of raw materials from products and buildings
- **WASTE-6-2015:** Promoting eco-innovative waste management and prevention as part of sustainable urban development
- **SCC-1-2014/2015:** Smart Cities and Communities solutions integrating energy, transport, ICT sectors through lighthouse (large scale demonstration - first of the kind) projects
- .....
- **SCC-1-2016-2017:** Smart Cities and Communities lighthouse projects
- **SCC-02-2016-2017:** Demonstrating innovative nature-based solutions in cities
- .....
- **CE-SC5-03-2018:** Demonstrating systemic urban development for circular and regenerative cities
- **SC5-13-2018-2019:** Strengthening international cooperation on sustainable urbanisation: nature-based solutions for restoration and rehabilitation of urban ecosystems
- **SC5-14-2019:** Visionary and integrated solutions to improve well-being and health in cities
- **LC-SC3-SCC-1-2018-2019-2020:** Smart Cities and Communities

All the topics in [H2020 Participant Portal](#) and through [National Contact Points](#).



# H2020 projects:some examples



## Urban GreenUP, “New Strategy for Re-Naturing Cities through Nature-Based Solutions”

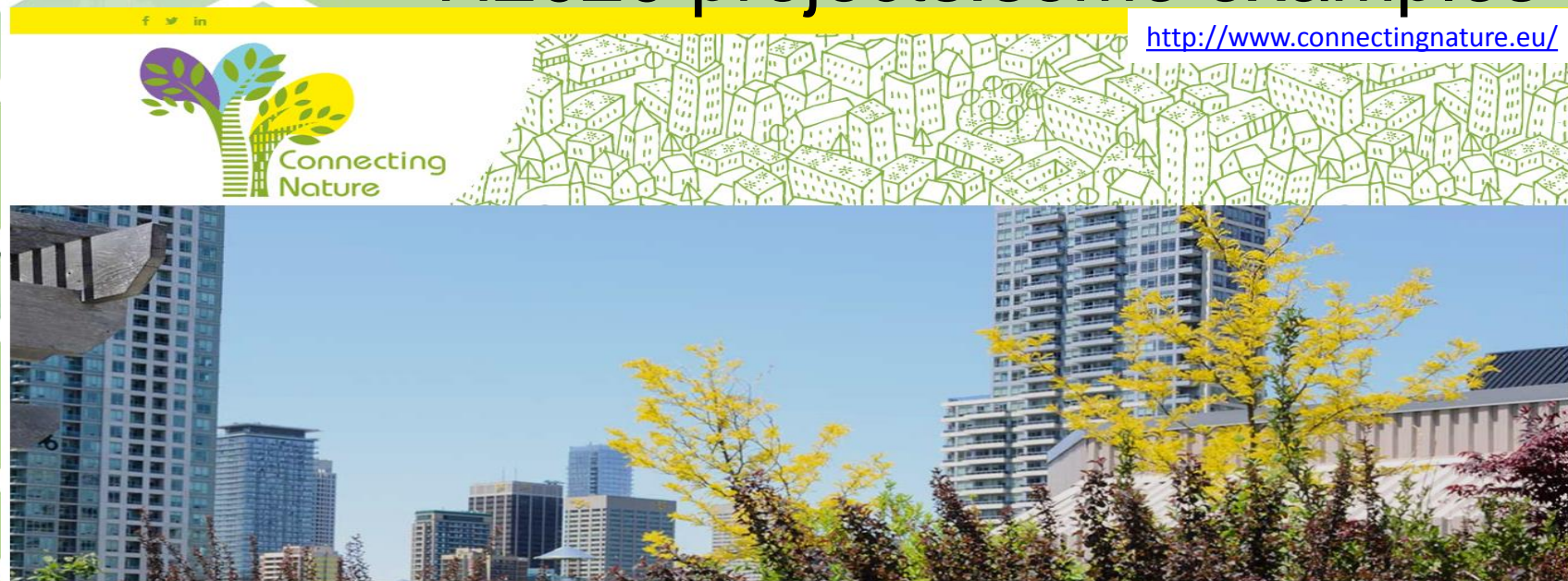
**Topic:** [SCC-02-2016-2017 - Demonstrating innovative nature-based solutions in cities](#)

**Type of Action:** Innovation Action    **Total cost:** EUR 14,8 million

**Coordination:** Spain (CARTIF)

**EU contribution:** EUR 14,0 million

# H2020 projects:some examples



## CONNECTING Nature, “COproduction with Nature for City Transitioning, INnovation and Governance”

**Topic:** [SCC-02-2016-2017 - Demonstrating innovative nature-based solutions in cities](#)

**Type of Action:** Innovation Action

**Total cost:** EUR 12,0 million

**Coordination:** Ireland (College Queen Elisabeth)

**EU contribution:** EUR 11,4 million

# MFF 2021-2027, EC proposal

## THE NEW MULTIANNUAL FINANCIAL FRAMEWORK 2021 - 2027 A BUDGET FOR A UNION THAT PROTECTS, EMPOWERS AND DEFENDS

In billion euro, current prices



### I. SINGLE MARKET, INNOVATION AND DIGITAL €187.4

- 1 Research and Innovation
- 2 European Strategic Investments
- 3 Single Market
- 4 Space



### II. COHESION AND VALUES €442.4

- 5 Regional Development and Cohesion
- 6 Economic and Monetary Union
- 7 Investing in People,  
Social Cohesion and Values



### III. NATURAL RESOURCES AND ENVIRONMENT €378.9

- 8 Agriculture and Maritime Policy
- 9 Environment and Climate Action



### IV. MIGRATION AND BORDER MANAGEMENT €34.9

- 10 Migration
- 11 Border Management



### V. SECURITY AND DEFENCE €27.5

- 12 Security
- 13 Defence
- 14 Crisis Response



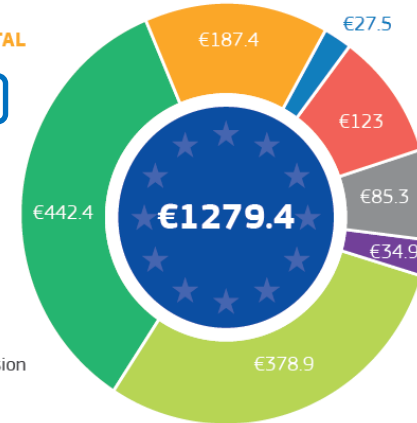
### VI. NEIGHBOURHOOD AND THE WORLD €123

- 15 External Action
- 16 Pre-Accession Assistance



### VII. EUROPEAN PUBLIC ADMINISTRATION €85.3

- 17 European Public Administration



Horizon Europe  
€97.9 billion



# Horizon Europe (2021-2027) the next R & I EU framework programme



# Horizon Europe, EC proposal



- **Open Science:** reinforcing and extending the excellence of the Union's science base
- **Global Challenges & Industrial Competitiveness:** boosting key technologies and solutions underpinning EU policies & SDGs
- **Open Innovation:** stimulating market-creating breakthroughs and ecosystems conducive to innovation



# Horizon Europe, EC proposal



Clusters	Areas of Intervention	Budget (€billion)
Health	Health throughout the life course; <b>Environmental and social health determinants</b> ; Non-communicable and rare diseases; Infectious diseases; Tools, technologies and digital solutions for health and care; Health care systems	7.7
Inclusive and Secure Societies	Democracy; <b>Cultural heritage; Social and economic transformations; Disaster-resilient societies</b> ; Protection and Security; Cybersecurity	2.8
Digital and Industry	Manufacturing technologies; Key digital technologies; Advanced materials; Artificial intelligence and robotics; Next generation internet; Advanced computing and Big Data; Circular industries; Low carbon and clean industry; Space	15
Climate, Energy and Mobility	Climate science and solutions; Energy supply; Energy systems and grids; <b>Buildings and industrial facilities in energy transition; Communities and cities</b> ; Industrial competitiveness in transport; <b>Clean transport and mobility; Smart mobility</b> ; Energy storage	15
Food and Natural Resources	Environmental observation; Biodiversity and natural capital; Agriculture, forestry and rural areas; Sea and oceans; Food systems; Bio-based innovation systems; <b>Circular systems</b>	10



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# Conclusion

- \_ R&I, an instrument and opportunity for cities (smart, sustainable, circular, liveable)
- \_ Looking for solutions (involvement of different stakeholders)
- \_ Focus on technological aspects but...also non-technological
- \_ Different options/programmes/initiatives to different needs/consortia/projects

**Don't miss the opportunities!!!!**

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CDTI

**THANK YOU FOR YOUR ATTENTION!**

# CDTI: Orientation & Services (i)

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# CDTI: Orientation & Services (ii)

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Industria y Manufacturas Tradicionales	Sergio Lourenso: <a href="mailto:sergio.lourenso@cdti.es">sergio.lourenso@cdti.es</a>
Transporte (Aeronáutica, Espacio y Ferroviario) y TICs aplicadas	Carmen Alonso: <a href="mailto:carmen.alonso@cdti.es">carmen.alonso@cdti.es</a>
Transporte (Automoción, Marítimo y Logística); y Comunicaciones y Software	Raúl García: <a href="mailto:garcia_raul@cdti.es">garcia_raul@cdti.es</a>



# CDTI: Orientation & Services (iii)

Ciencia Excelente | Liderazgo Industrial | Refos Sociales | Más Europa

Google Búsqueda

## ESHORIZONTE2020

Portal español del Programa Marco de Investigación e Innovación de la Unión Europea

GOBIERNO DE ESPAÑA  
MINISTERIO DE CIENCIA, INNOVACIÓN Y UNIVERSIDADES



Buenas prácticas de Universidades en Horizonte 2020

 <b>HORIZONTE 2020</b>	 <b>HOW TO PARTICIPATE</b>	 <b>European Commission</b>	
<b>¿Qué es?</b> Es el programa que financia proyectos de investigación e innovación de diversas áreas temáticas en el contexto europeo, contando con casi 80.000M€ para el periodo 2014-2020. Investigadores, empresas, centros tecnológicos y entidades públicas tienen cabida en este programa. Amplía la información aquí.	<b>Cómo Participar</b> La Guía del Participante en Horizonte 2020 le permitirá tener información general de H2020 y sobre el proceso de participación. Para obtener asesoramiento personalizado, los Puntos Nacionales de Contacto temáticos le ayudarán en todas las fases de la propuesta. Acceda a la sección <b>Cómo participar</b> .	<b>Propuesta de la Comisión Europea para Horizonte Europa</b> La Comisión Europea ha presentado su propuesta para el próximo Programa Marco de Investigación e Innovación (PMI) para el periodo 2021-2027, que se denominará Horizonte Europa.	<b>Jornada "EC Communication Campaign: Las Reglas de participación en Horizonte 2020. Últimas novedades"</b> El próximo 8 de octubre se celebrará una Jornada informativa en la sede del Ministerio de Ciencia, Innovación y Universidades (Madrid), sobre aspectos legales y financieros de Horizonte 2020.

### CALENDARIO DE ACTIVIDADES

Septiembre 2020


L	M	X	J	V
3	4	5	6	7
10	11	12	13	14
17	18	19	20	21
24	25	26	27	28

**Puntos Nacionales DE CONTACTO**

**NOTICIAS**

**EVENTOS**

## Puntos Nacionales DE CONTACTO



, instrument and opportunity

MINISTERIO DE ECONOMÍA, INDUSTRIA Y COMPETITIVIDAD

**CDTI** Centro para el Desarrollo Tecnológico Industrial

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# CDTI: Orientation & Services (iv)



**CDTI in the world**



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Industrial

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+ info sobre programas y ayudas  
para la  
internacionalización de la I+D+I española

[www.eshorizonte2020.es](http://www.eshorizonte2020.es) - [www.cdti.es](http://www.cdti.es)



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